*D.) REMARKS*

## Introduction

The Office Action has been received and carefully considered. Claims 1-10 are pending in the application. Claims 1-10 stand rejected by the Examiner. By this amendment the Abstract and claim 10 are amended in response to the Examiner's objections. No new matter is added by these amendments. As such, Applicant respectfully submits that the application is now in condition for allowance and in better form for consideration on appeal. Accordingly, Applicant respectfully requests entry of the amendments.

## Claim Rejections

*§ 103 Rejections*

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over United States Patent No. 5,853,864 to Bunnelle ("Bunelle") in view of United States Patent No. 5,961,761 to Heindel, *et al.* ("Heindel"). Applicant respectfully traverses this rejection, and requests reconsideration and allowance of the pending claims in view of the following remarks.

Three criteria must be met to establish a *prima facie* case of obviousness: (1) there must be some suggestion or motivation to modify the reference or to combine reference teachings, (2) there must be a reasonable expectation of success, and (3) the prior art references must teach or suggest all the claim limitations. *See* MPEP § 2142 *et seq.* Applicant respectfully submits that the prior art of record, regardless of whether it is properly combined, fails to teach or suggest all of the features of the proposed amended claims, and therefore there is no *prima facie* case of obviousness.

The Examiner alleges that while Bunnelle teaches a slow crystallizing hot melt adhesive, it does not explicitly set forth the following elements of the claimed invention: (1) the combination of a mechanical fastener and the remainder of the garment, and (2) the specific bond static shear strength. Office Action, page 3. With regard to the first

deficiency of Bunnelle, the Examiner alleges that Heindel teaches the use of a hot melt adhesive to bond a mechanical fastener to a diaper. "To employ a mechanical fastener as taught by Heindel as a component of the Bunnelle article and attached by the adhesive and method thereof would be obvious to one of ordinary skill in the art." Office Action, page 4. With respect to the second deficiency of Bunnelle, the Examiner alleges that "since the prior art combination teaches attaching a mechanical fastener under the same conditions as disclosed would necessarily and inevitably result in a bond static shear strength as claimed when tested as disclosed." Office Action, page 4.

Despite the Examiner's allegations, the Examiner has failed to show that the static shear strength properties of the claimed invention are not inherent in the adhesives described in Bunnelle. In *E.I. duPont & Co. v. Phillips Petroleum* Co., the CAFC held that "[o]n occasion, particularly with polymers, structure alone may be inadequate to define the invention, making it appropriate to define the invention in part by property limitations." 849 F.2d 1430,1435, 7 USPQ2d 1129 (Fed. Cir. 1988). In the *E.I. duPont* case, the claims in question recited a polymer having specific structure and specific properties. The court held that the structure alone was inadequate to determine anticipation of a claimed polymer: "the issue is not... whether one can get a patent on discovering a new property of an old composition of matter. The issue is whether the claimed copolymer as defined in part by various property parameters, is new." *Id.* at 1436. Applied to this matter, the Applicants submit that "slow crystallizing adhesives" encompass a range of compositions, each composition having different properties from the others. However, the "slow-crystallizing adhesives" that are essential to, and claimed in the present invention are defined in part by the static shear bond strength property, which is not taught in the cited references.

Bunnelle teaches a "novel spray-on adhesive composition made from components that interact to produce a composition that, after cooling below the softening points of the components, retains sufficient liquidity, for a sufficient period of time... and to create a strong mechanical bond that is not substantially weakened,

debonded, or delaminated by moisture." Bunnelle, col. 3, l. 65 - col. 4, l. 8. Bunnelle teaches that there are three components in the adhesive that contribute to the final properties: (a) the polymer base (*i.e.*, the block copolymer), (b) the tackifying resin, and (c) the plasticizer. One of ordinary skill in the art would recognize that the tackifying resin and the plasticizer contribute to the sprayability and wet-out of the molten polymer. In addition, the compatibility of the tackifier and plasticizer control the crystallization rate (*see* Bunnelle, col. 14, l. 61 to col. 15, l. 3). When the content of the base polymer in the adhesive is high, the base polymer component of the adhesive contributes most to the finished strength (cohesion) of the adhesive. When the content of the base polymer of the adhesive is low, the base polymer tends to reduce the Tg of the adhesive (improving the flowability). *See* U.S. Patent No. 5,624,986 at col. 9, ll. 40-51. Bunnelle teaches that the disclosed block copolymers (*e.g.*, S-I-S and S-B-S) are important to the moisture-resistant properties of the adhesive. Bunnelle also briefly discloses the properties of the adhesives. Figures 1 - 3 of Bunnelle pertain to penetration, shear modulus, and crystallization rate of the adhesives. In addition, Bunnelle provides Moisture Resistance Test (peel strength) results for the Example IV adhesive, as applied to substrates (tissue). Bunnelle, col. 16, lines 41-56. The Applicant notes that the Example IV adhesive (dry) exhibited "cohesive failure if pulled slowly." Bunnelle is silent to other properties of the disclosed adhesives, particularly peel strength and shear strength, and more particularly static shear strength. At best, Bunnelle discloses an adhesive formulation that exhibits cohesive failure when subjected to a peel test, but this strength does not worsen when subjected to moisture.

As set forth in the last response to the Examiner, Applicants submit that adhesive manufacturers can formulate adhesives to meet any number of designated needs specified by the end user. Likewise, slow-crystallizing adhesives may be formulated to have various different properties, and the fact that a slow-crystallizing hot melt adhesive, such as the one described in Bunnelle, may provide certain dynamic peel strength test results does not indicate how those same formulations will fare in a static

shear strength test. In fact, Bunnelle provides no data to suggest that the slow-crystallizing hot melt adhesives preferred for its application of resisting moisture-induced debonding would also provide the claimed static shear strengths claimed by the present invention.

The Applicant discovered that certain formulations of slow-crystallizing hot melt adhesives can, indeed, provide the high static shear strengths required for use with fastener applications, and specifically claims the use of slow-crystallizing hot melt adhesives in fastener bonds that provide high static-shear strength. Bunnelle does not contemplate that slow-crystallizing hot melt adhesives (of any formulation) can provide this benefit at any point in his teachings, and it is well understood that the solidified peel strength that he discloses can not be reliably used to correlate with the claimed static shear strength. Thus, in specifying an adhesive for load-bearing elements like fasteners, one of ordinary skill in the art would choose an adhesive using an entirely different set of criteria (static shear strength) than those taught in Bunnelle (dynamic peel strength), making reference to the Bunnelle patent practically useless as a reference to teach how to apply fastener tabs to garments.

Heindel also fails to suggest the slow-crystallizing hot melt adhesive static shear strengths claimed by the present invention. Heindel simply suggests the general use of hot melt adhesives to join fastener materials together. Specifically, the Applicant has determined that the static shear test is the most predictive and useful test to use in determining the appropriateness of a hot melt adhesive for fastener bonding applications. Indeed, the Applicant tested a hot melt adhesive traditionally considered to be strong by those of ordinary skill in the art (that is, one that would be suggested by Heindel), and observed that this strong adhesive did not produce bonds that satisfied the static shear strength requirements. In contrast, the slow-crystallizing adhesive that was used under the same conditions consistently produced bonds that were superior to the traditional strong hot melt adhesive, both in the static shear strength test, and in real-life conditions. Thus, the Applicant claims slow crystallizing hot melt adhesives

having the specific measurable properties. Heindel makes no suggestion that slow-crystallizing hot melt adhesives can be formulated to provide such bonds, and therefore fails to anticipate the present invention.

Therefore, the references in combination do not teach or suggest all the elements of the claims, and do not support a *prima facie* case of obviousness. Accordingly, the Applicant respectfully requests that the Examiner reconsider and withdraw these rejections and allow claims 1-10.

## Conclusion

For at least the reasons outlined above, Applicant submits that the application is in condition for allowance. Entry of the amendments and favorable reconsideration and allowance of the pending claims are respectfully solicited. Should there be any questions regarding the foregoing, the Examiner is invited to contact the applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,
HUNTON & WILLIAMS LLP

Dated: Oct. 14, 2003 By: _____

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